

Academic Tenacity: Non-cognitive Factors that Facilitate Student Success.

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I can't do this.

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“ . . . I hypothesize that the effective teachers . . . are indeed boosting their students’ achievement, but they are also boosting other important skills, traits, or attributes that aren’t measured. . . I am betting that they could be psychological constructs like grit, perseverance, self-control, engagement, emotional intelligence, social emotional learning, or sense of mastery, concepts that I haven’t mentioned today. These are things that I believe are highly valuable and that both we in the measurement and research community and our partners in schools and districts should be more mindful of. The test score accountability movement has pushed aside many of these so-called ‘non-cognitive’ or ‘soft’ skills and they belong back on the front burner.”

Outline

- What are non-cognitive factors?
- How are non-cognitive factors measured?
- What is the empirical support?
- How to shape learning environments to promote these factors?

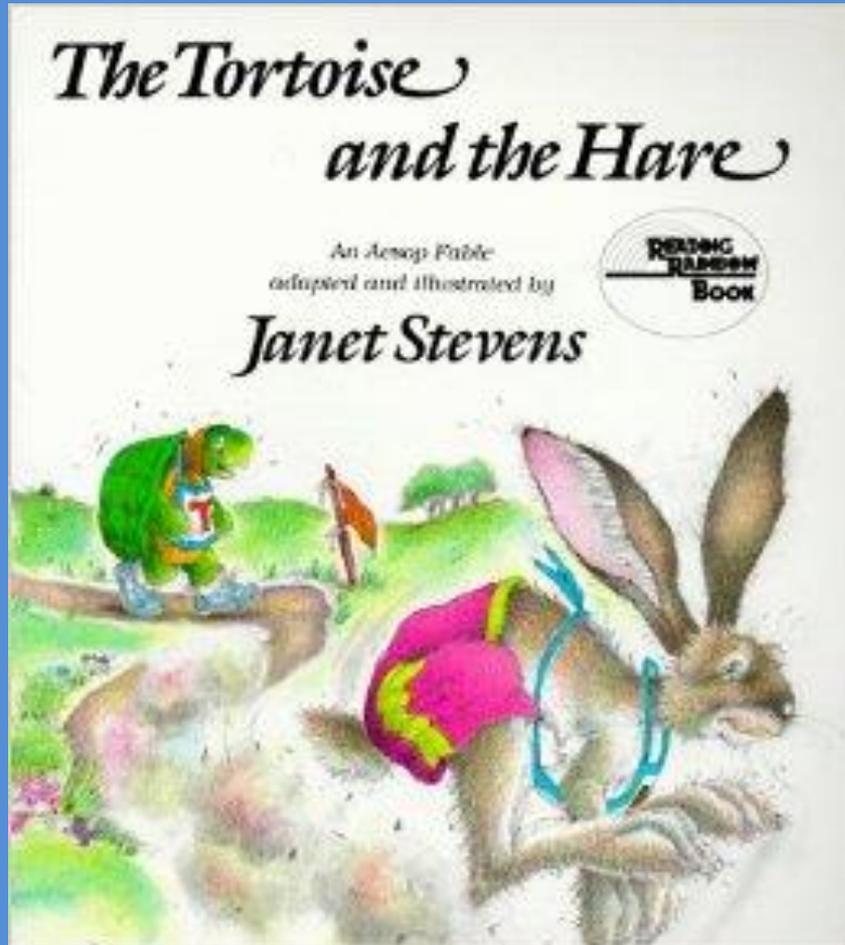
Psychology in the Classroom

- Stereo-Type Threat
- Identity-Based Motivation
- Mindset
- Grit/Perseverance/Tenacity

Mindset

- ✓ Is intelligence set in stone? Is it a fixed trait?
- ✓ Is personality set in stone?
- ✓ Is morality set in stone?
- ✓ Is talent set in stone?

Mindset



Suggests that you
either have ability

OR

you have to
expand effort.

Fixed Mindset

Definition of “smart” – Make no mistakes; Finish tasks quickly; Find tasks easy.

Potential is innate; “you’re a natural”;
You are.

Have to be.

Being smart defined as special,
different from others, or better than
others.

Feel urgency to succeed.

Failure is intolerable and provides no
future direction.

Growth Mindset

Definition of “smart” – When I figure
something out; harder the better.

Potential is developed over time;
You become.

Luxury of becoming.

Being smart defined as improving
individually and is no different than
others.

Success is cultivated.

Failure hurts but isn’t defining.

Empirical Support for Mindset

- Several hundred adolescents given ten fairly easy items from non-verbal IQ test.
- Group 1: praised with Wow, you got 8 right. That's a really good score. **You must be smart at this.**
- Group 2: praised with Wow, you got 8 right. That's a really good score. **You must have worked really hard.**

Empirical Support for Mindset

➤ Group 1: *You must be smart at this.*

- ✓ When given more difficult items, these individuals didn't feel smart anymore and actually felt deficient.
- ✓ Selected easy task afterward and rejected opportunity for even more challenging items.
- ✓ Performance continued to diminish, even for easier items.

➤ Group 2: *You must have worked really hard.*

- ✓ Enjoyed the challenge of the difficult items and focused on learning the solution.
- ✓ Selected challenging new items in the next task.
- ✓ Performance continued to improve.

Empirical Support for Mindset

- College students, after doing poorly on a test, were given the chance to look at tests of other students. Those in the growth mindset looked at the tests of people who had done better than they had to correct their deficiency. Students in the fixed mindset chose to look at the tests of people who had done really poorly. (Nussbaum & Dweck, 2008)
- When challenged with difficult material, students with growth mindset explored alternative learning strategies, those with a fixed mindset continued to re-read material and eventually stopped trying as material was deemed too difficult. (Grant & Dweck, 2003)

How might a Fixed versus Growth Mindset appear in your course(s)?

Grit/Perseverance/Tenacity

Grit – Perseverance and passion for long-term goals that entails working strenuously toward challenges, maintaining effort and interest over time despite adversity, and plateaus in progress.

Grit/Perseverance/Tenacity

The Grit Scale

Empirical Support for Grit

The West Point Study

Whole Candidate Score (index of talent)

SAT

Class rank

Demonstrated leadership

Physical aptitude

The Grit Scale

Best predicted drop out

Empirical Support for Grit

The National Spelling Bee Study

- The Grit Scale best predicted advancement to later rounds and strongly correlated with hours spent in controlled effortful practice.

Lets talk about grit in the classroom

- What skills related to grit are needed in your course?
- What student behaviors and performances reveal evidence of these skills?

Additional Trends

- OneGoal (College Graduation. Period.)
 - Jeff Nelson, CEO
 - Began in 2007
 - Brings together students from low-income communities in South Side Chicago
 - Curriculum: ACT Prep; College admission process, non-cognitive skill development
 - **To date, 87 percent of OneGoal's high school graduates have enrolled in college. Of those who enroll, 85 percent are persisting in college or have graduated with a college degree.**

Next Steps

- It is the responsibility of the learning community to explore how to design a learning environment that promotes these factors.
- Mindful attention to non-cognitive approaches to learning
 - Grit and Mindset
 - Effortful Control
 - Strategies and Tactics

Conclusions

- Involvement and support by all educational stakeholders.
- Utilize research-based best practices.
- Educate Stakeholders on Non-cognitive Factors.
- Unify Themes and definitions.
- Connect non-cognitive factors to discipline-specific context.

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